

# Lower Columbia Salmon Recovery And Fish & Wildlife Subbasin Plan

APPENDIX E – ASSESSMENT METHODS

Lower Columbia Fish Recovery Board

December 15, 2004

Preface

This is one in a series of volumes that together comprise a Recovery and Subbasin Plan for Washington lower Columbia River salmon and steelhead:

	Plan Overview	Synopsis of the planning process and regional and subbasin elements of the plan.
Vol. I	Regional Plan	Regional framework for recovery identifying species, limiting factors and threats, the scientific foundation for recovery, biological objectives, strategies, measures, and implementation.
Vol. II	Subbasin Plans	Subbasin vision, assessments, and management plan for each of 12 Washington lower Columbia River subbasins consistent with the Regional Plan. These volumes describe implementation of the regional plan at the subbasin level.
		II.A. Lower Columbia Mainstem and Estuary
		II.B. Estuary Tributaries
		II.C. Grays Subbasin
		II.D. Elochoman Subbasin
		II.E. Cowlitz Subbasin
		II.F. Kalama Subbasin
		II.G. Lewis Subbasin
		II.H. Lower Columbia Tributaries
		II.I. Washougal Subbasin
		II.J. Wind Subbasin
		II.K. Little White Salmon Subbasin
		II.L. Columbia Gorge Tributaries
Appdx. A	Focal Fish Species	Species overviews and status assessments for lower Columbia River Chinook salmon, coho salmon, chum salmon, steelhead, and bull trout.
Appdx. B	Other Species	Descriptions, status, and limiting factors of other fish and wildlife species of interest to recovery and subbasin planning.
Appdx. C	Program Directory	Descriptions of federal, state, local, tribal, and non- governmental programs and projects that affect or are affected by recovery and subbasin planning.
Appdx. D	Economic Framework	Potential costs and economic considerations for recovery and subbasin planning.
Appdx. E	Assessment Methods	Methods and detailed discussions of assessments completed as part of this planning process.

This plan was developed by of the Lower Columbia Fish Recovery Board and its consultants under the Guidance of the Lower Columbia Recovery Plan Steering Committee, a cooperative partnership between federal, state and local governments, tribes and concerned citizens.

### **Lower Columbia Fish Recovery Board Current Members**

Dave Andrew	vdro-Electric Representative	Cowlitz PUD

John Barnett\* Tribal Representative Cowlitz Indian Tribe

Mark Doumit Legislative Representative WA State Senate

Bill Dygert\* Clark County Citizen

Dennis Hadaller Lewis County Commissioner

Henry Johnson\* Wahkiakum County Citizen

Tim Leavitt SW WA Cities Representative City of Vancouver

Jeff Rasmussen Cowlitz County Commissioner

Tom Linde Skamania County Citizen

Al McKee\* Skamania County Commissioner

Betty Sue Morris\* Clark County Commissioner

Don Swanson SW WA Environmental Representative Citizen
Randy Sweet\* Cowlitz County & Private Property Interests Citizen
Chuck TenPas Lewis County Citizen

George Trott Wahkiakum County Commissioner

# Lower Columbia Fish Recovery Board

Past Members			
Glenn Aldrich*	Lewis County	Commissioner	1998-1999
Dean Dossett*	SW WA Cities Representative	City of Camas	1998-2003
Marc Duboiski	Lewis County	Commissioner Designee	1999-2000
Tom Fox*	Lewis County	Citizen	1998-2002
Gary Morningstar*	Skamania County	Citizen	1998-2002
Bill Lehning	Cowlitz County	Commissioner	2003-2004
Ron Ozment	Wahkiakum County	Commissioner	1999-2003
John Pennington*	Legislative Representative	WA State House of Representatives	1998-2001
George Raiter	Cowlitz County	Commissioner	2001-2002
Joel Rupley*	Cowlitz County	Commissioner	1998-2001
Dan Smalley*	Wahkiakum County	Commissioner	1998-1999
Leon Smith*	Hydro-Electric Representative	Cowlitz PUD	1998-2000
Jim Stolarzyk*	SW WA Environmental Representative	Citizen	1998-2000

<sup>\*</sup>Charter Member

#### Lower Columbia Recovery Plan Steering Committee

Mark Bagdovitz, US Fish and Wildlife Service

John Barnett, Cowlitz Indian Tribe

Chinook Tribe

Dean Dossett, SW WA Cities Representative

Patty Dornbusch, NOAA-Fisheries

Bill Dygert, SW WA Citizen

Tony Grover, Northwest Power and Conservation Council

Mark LaRiviere, Hydro-Electric Representative

Claire Lavendel, US Forest Service, Gifford-Pinchot

Tim Leavitt, SW WA Cities Representative

Scott McEwen, Lower Columbia Estuary Partnership

Betty Sue Morris, SW WA County Commissioners Representative

Phil Miller, Governor's Salmon Recovery Office

Randy Sweet, SW WA Citizen

George Trott, SW WA County Commissioners Representative

Paul Ward, Yakama Nation

Robert Willis, US Army Corp of Engineers

Lee VanTussenbrook, Washington Department of Fish and Wildlife

#### **Lower Columbia Fish Recovery Board Staff**

Jeff Breckel Executive Director Melody Tereski Program Manager

Phil Trask Watershed and ESA Recovery Plan Coordinator

Gary Wade Habitat Project Coordinator

Lorie Clark Program Assistant

Abigail Andrews Student Intern
Kara Ouellette Student Intern

#### **Consultants**

Ray Beamesderfer Project Manager SP Cramer and Associates

Kent Snyder Project Manager The White Co.

Guy Norman Fish Management Lead SP Cramer and Associates

Gardner Johnston Habitat Lead SP Cramer and Associates

Mike Daigneault Estuary Lead SP Cramer and Associates

Caryn Ackerman Technical Support SP Cramer and Associates
Nick Ackerman Technical Support SP Cramer and Associates

Jodi Brauner Lando Technical Support SP Cramer and Associates

Eric Doyle Technical Support URS Corporation

Brandy Gerke Technical Support SP Cramer and Associates

Steve Hughes Technical Support URS Corporation

Cleve Steward Technical Support Steward and Associates

Barbara Taylor Technical Support SP Cramer and Associates
Eric Knudsen Editorial Support SP Cramer and Associates

Eric Knudsen Editorial Support SP Cramer and Associa

Christy Osborn Editorial Support The White Co.

Lower Columbia River Estuary Partnership

**Mobrand Biometrics** 

Parametrix

Research Group

WA Department of Fish and Wildlife

Zenn and Associates

## TABLE OF CONTENTS

- 1.0 POPULATION RANKING
- 2.0 RUN RECONSTRUCTION
- 3.0 COHO CAPACITY ESTIMATION
- 4.0 INTEGRATED WATERSHED ASSESSMENT (IWA)
- 5.0 INTEGRATED WATERSHED ASSESSMENT RESULTS
- 6.0 APPLICATION OF THE EDT MODEL
- 7.0 DOCUMENTATION USED IN THE EDT MODEL
- 8.0 ANADROMOUS FISH BARRIERS
- 9.0 EDT COMPARISON
- 10.0 ASSESSMENT OF CURRENT STATUS AND LIMITING FACTORS
- 11.0 SCENARIO DEVELOPMENT PROCESS